

REMARKS/ARGUMENTS

This Amendment is filed in response to the Office Action mailed February 18, 2004 in the above captioned patent application. In that Office Action, Claims 1, 4, 6 and 7 were rejected under 35 U.S.C. Section 102(b) over US Patent 5,488,897 to Snyder. Claim 11 was rejected under 35 U.S.C. Section 102(b) over US Patent 3,996,847 to Reed. Claims 2 and 20 were rejected under 35 U.S.C. Section 103(a) over Reed in view of Snyder. Claim 9 was rejected under 35 U.S.C. Section 103(a) over Snyder in view of US Patent 3,632,982 to Linger. Applicant respectfully traverses these rejections for the reasons set forth below.

Claim 1 recites at least two input heat transfer elements for extending into a mass of product. The Snyder patent discloses a cooking grid with peaks formed by parallel rails 10R. As stated in Snyder at Column 8, line 58, the food being cooked is placed on top of the rails for cooking. Thus, Snyder can't be a proper basis for a Section 102 rejection of claims 1, 4, 6 and 7 as it does not have elements for extending into a mass of product. The only reason Snyder has parallel rails in the first place is to form the parallel valleys for drawing away the cooking juices as explained in Column 6, lines 5-12. As noted in Snyder at Column 8, line 55, the distance from the peak to the valley is only ½ inch, and no more than 1 ½ inches. Snyder is concerned only with cooking juice, and not using input heat transfer elements for extending into a mass of product. The sides of the rails in Snyder catch drips and are not in contact with the food and do not contribute to cooling or heating. New claims 25-26 have been added in this Amendment to recite length dimensions of the input heat transfer elements of no less than 4 inches, or 4 to 10 inches. Snyder teaches away from such dimensions by explicitly stating a distance of no more than 1 ½ inch.

Claim 4, dependent on claim 1, has been amended to recite the at least two input heat transfer elements having pan contacting surfaces. None of the cited references disclose such structure.

Claim 11 has been amended to recite the apparatus is used to change the temperature of pre-cooked food. Thus, the apparatus includes heat transfer elements for extending into the pre-cooked food. Reed is intended to cook hamburgers, not to change the temperature of pre-cooked food. Thus, Reed can't be the basis for a proper Section 102 rejection of Claim 11. The present invention can cool, rethermalize and reheat.

The rejection of Claims 2 and 20 over the combination of Snyder and Reed is respectfully traversed. There is no incentive to combine the teachings of these references. Snyder uses dedicated heat sources, such as electric heater rods, to heat the cooking grid 10. Snyder would have no use for air contact fins or rectangular fins. Snyder thus teaches away from the combination. Reed, in turn, also has no incentive to combine its teaches with Snyder. Reed

teaches impaling hamburgers with projecting grills 22. Snyder simply lays food to be cooked on top of its rails

The rejection of Claim 9 over the combination of Snyder and Linger is also respectfully traversed. Claim 9 has been amended to recite the significant advantage of the present invention of having the temperature measured in the apparatus be essentially the same as the temperature of the mass of product, typically pre-cooked food, with which it is used. Since the apparatus is made of material with high heat conductivity, and is in intimate contact with all of the mass of product through its insertion into the product, the temperature of the apparatus is very close to the temperature of the mass of product, within 1 degree F. after acquisition of steady state heat transfer. This is very important to food safety considerations as the food must be reheated to a certain minimum temperature for food safety.

The claimed apparatus provides a very accurate indication of this critical temperature. This advantage is possible because the claimed apparatus is essentially a passive device. The apparatus is in intimate contact with the mass of product and no electric or other heat source is in the apparatus, or so near the apparatus, as to cause the temperature of the apparatus to be determined by the heating element, and not by the mass of product. In a heating device, the temperature measured is that of the heating element itself, not the temperature of the matter being heated. The Linger reference is of the type simply measuring the temperature of a heat source, and not the temperature of the matter being heated.

New claims 24-35 have been added by this Amendment. Several of these claims provide specific dimensions to the length of the input heat transfer elements to clearly distinguish the claimed invention over Snyder and Reed. The length of the elements in the present invention is at least 4 inches, as set forth on Page 12, lines 25-27 of the application. As noted, Snyder requires the distance between the peaks and valleys to be no more than 1 ½ inches. Reed, in using projecting grills 22 to impale a hamburger patty, only needs grills 22 about as long as the thickness of the hamburger patty. Reed characterizes as thick a ¾ inch hamburger. Thus one would expect the grills 22 to be less than ¾ inches long.

New claim 24 recites the use of the apparatus with pre-cooked foods as the mass of product. Both Snyder and Reed are clearly used to cook foods. Neither patent relates to the rapid heating or cooling of pre-cooked foods.

New claims 27 and 30 recite a leading edge for extending into the mass of product that is linear, as can clearly be seen in Figures 1A, 1B, 5 and 6 for example. Reed uses discrete projecting grills 22 to impale the hamburgers. Reed must have discrete grills 22 to avoid cutting the hamburgers into slices, rather than leaving them as whole patties. In contrast, the present invention is particularly advantageous in rapidly reheating and cooling liquid and semi-solid products, although it can clearly be used with solid products when the elements slicing into the product is not a concern. The linear edge maximizes the area of contact between the elements and the product to maximize the heat transfer.

New claims 31-35 address advantages of the present invention. As set forth in new claim 31, the apparatus has fins, such as fins 22, that are significantly longer than the distance separating adjacent fins. This maximizes the surface area available for contacting the mass of product when the fins are inserted therein. The maximum distance from the peak of the rails 452 to the lowest point in the valleys of Snyder is at most 1 ½ inches (Column 8, lines 53-56) which appears to be about the separation between adjacent peaks. Thus Snyder would be particularly unsuitable for insertion in a mass of product for conducting effective heat transfer.

New claim 32 provides the input heat transfer elements are fins having parallel flat, planar surfaces. The output heat transfer element is also a fin with surfaces parallel the surfaces on the input heat transfer elements. This again maximizes efficient heat transfer. Snyder clearly has only semicircular curved channels 10C.

New claim 33 recites a pan as part of the apparatus. Neither Snyder nor Reed disclose such structure.

New claim 34 recites the apparatus has no more than four input heat transfer elements. Clear support for this language is found in Figures 1B, 16 and 18, for example. Neither Snyder nor Reed would be effective with only four rails 10R or grills 22.

New claim 35 recites the length of the input heat transfer elements is significantly greater than the thickness, again providing for efficient heat transfer to and from the mass of product. This language is supported by Figures 1A and 1B for example. Both Snyder and Reed must have rails 10R and grills 22 of significant thickness relative to other dimensions to achieve their purpose in cooking.

Claims 3, 5, 8 and 10 have been canceled without prejudice.

Applicant respectfully requests that a timely Notice of Allowance be issued in this application. A petition for a one month extension is filed herewith. No fees are believed necessary for the proper filing of this Amendment. However, if any fees are necessary, including any other extension fees under Rule 136, please withdraw such fees as are necessary from Deposit Account 50-1274(12643/210).

Respectfully submitted,



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